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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,924	01/25/2002	Edward G. Price	T9242.NP	3996

7590 09/18/2003

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EXAMINER

PHAN, THO GIA

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 09/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application N		Applicant(s)	
	10/056,924		PRICE ET AL.	
	Examiner		Art Unit	
	Tho G. Phan		2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-21,25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14 and 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

Amendments "A" received on 06/30/03 have been entered as paper number 6 in this application.

1. Applicant's arguments with respect to claims 1-3, 5-12, 14 and 22-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-12, 14 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sydor (5,479,182) [of record] in view of Albright (4,161,737) [newly cited].

Sydor in figures 1-9 discloses a helical antenna comprising a conductive base plate 18 operatively interconnected to the shielding 25 of the input line 24 a dielectric rod 16 mounted on the base plate 18, a conductive helix 20 wrapped around the dielectric rod

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and a tapered matching network 22 connected between the core 21 of the input line and the conductive helix configured to match an impedance of the conductive helix with an impedance of the input line. Sydor has been discussed above but fails to expressly teach the helix having a pitch angle of at least 12 degrees, the length of the tapered strip line matching network is $1/4$ of the signal wavelength, a solid dielectric rod and a radome. However, Albright in figures 2-3 teaches a solid/hollow dielectric rod 15 and a radome 34,35. It would have been an obvious design expedient to provide Sydor with a solid dielectric rod and a radome as taught by Albright for the purpose of improving the strength of supporting the antenna and for protecting the antenna from the weather.

Regarding the helix having a pitch angle of at least 12 degrees, and the length of the tapered strip line matching network is $1/4$ of the signal wavelength. It would have been an obvious design expedient to provide Sydor with the helix having a pitch angle of at least 12 degrees, and the length of the tapered strip line matching network is $1/4$ of the signal wavelength, because the angle/length of the helix/tapered strip-line may be empirically adjusted to provide appropriate tuning for the antenna.

Regarding the acetal resin dielectric rod is Delrin; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the dielectric rod comprising one of Delrin material, since it has been held to be within the

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general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

4. Claims 15-21 and 25-26 are allowed.
5. Applicant's amendment necessitated the new grounds of rejection. Accordingly,

THIS ACTION IS MADE FINAL. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Kulisan et al cited as of interest and illustrates a similar structure to a helical antenna assembly.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner THO G. PHAN whose telephone number is (703) 308-3051.

8. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

9. Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

A handwritten signature in black ink, appearing to be 'THO G. PHAN', with a long horizontal line extending to the right.

THO G. PHAN

Patent Examiner

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September 4, 2003